GOVERNMENT OF INDIA
WATER RESOURCES, RIVER DEVELOPMENT AND GANAGA REJUVENATION
LOK SABHA

UNSTARRED QUESTION NO:5481
ANSWERED ON:06.04.2017
National Silt Policy
Adsul Shri Anandrao ;Boianapalli Shri Vinod Kumar;Chavan Shri Ashok Shankarrao;Gaikwad Dr. Sunil Baliram;Gupta Shri Sudheer;Kirtikar Shri Gajanan Chandrakant;Munde Dr.Pritam Gopinath;Patil Shri Shivaji Adhalrao;Radhakrishnan Shri T.;Raut Shri Vinayak Bhaurao;S.R. Shri Vijay Kumar;Shinde Dr. Shrikant Eknath;Shrirang Shri Chandu Barne;Singh Shri Kunwar Haribansh;Singh Shri Parvesh Sahib;Yadav Shri Dharmendra

Will the Minister of WATER RESOURCES, RIVER DEVELOPMENT AND GANAGA REJUVENATION be pleased to state:

(a) whether it is a fact that many rivers have over the years lost their capacity to hold water due to deposition of excessive silt and if so, the details thereof;

(b) whether the Government is planning to come out with a National Silt Policy to handle threat of floods in many parts of the country during Monsoon and to address the issue of sedimentation and dredging and if so, the details thereof;

(c) whether many committees have been constituted in the past to look into the said problems in rivers in the country and if so, the details of the recommendations made by these committees;

(d) the action taken by the Government on the suggestions made by these committees and the extent to which the action taken so far thereon has been able to tackle the silt problem; and

(e) the time by which the said policy is to be implemented including the other steps taken/being taken by the Government in this direction?

Answer

THE MINISTER OF STATE IN MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION
(DR. SANJEEV KUMAR BALYAN)

(a) (b) & (e) Erosion and deposition of silt is a natural process in alluvial rivers. The rivers pick up and drop their silt load as per their regime condition. The decrease in water depth of river is caused due to siltation of river bed in specific reaches, which depends on various factors viz. discharge in the river, river slope, morphology, nature of silt etc.

Regarding formulation of a comprehensive policy on sediment management in rivers in the country, a National Conference on Sediment Management in Indian rivers was organised by this Ministry on 17.03.2017which was attended by many experts and senior officials from Central/ State Governments. The Conference made number of recommendations regarding the policy framework on Sediment Management in Indian rivers. The time required for formulation of policy depends upon consultations with stakeholders.

(c) & (d) The Ministry had constituted the following Committees to study the problem of silting of rivers.
(i) A Committee headed by Dr. B.K. Mittal, former Chairman, Central Water Commission in 2001 to study the problem of silting in the rivers.
(ii) A Committee headed by Shri Madhav Chitale, Expert Member, NGRBA in 2016 for preparation of guidelines for works on de-siltation from Bhimgauda (Uttarakhand) to Farakka (West Bengal).
(iii) An Expert Committee on Erosion and Siltation in Rivers (ECESR) headed by Director, CWPRS, Pune in 2016 to study the problem of erosion, siltation and requirement of de-siltation/dredging of rivers particularly in Brahmaputra and Ganga.

The details of these Committees are at Annex-I
The measures of flood management including desilting of rivers are formulated by the State Governments as per their priority. The Government of India supplements the efforts of State Governments by providing technical guidance and promotional financial assistance for critical areas. The suggestions have been forwarded to the State Governments. The Government of India had launched Flood Management Programme (FMP) for providing central assistance to States for works relating to river management, flood control, anti-erosion, drainage development, flood proofing, restoration of damage flood management works, anti sea erosion, catchment area treatment works etc.
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Annex-I

ANNEXURE REFERRED TO IN REPLY TO PART (c) to (d) OF LOK SABHA UNSTARRED QUESTION NO. 5481 FOR ANSWER ON 06.04.2017 REGARDING "NATIONAL SILT POLICY"

1. Committee headed by Dr. B.K.Mittal, former Chairman, Central Water Commission(2001).

Ministry of Water Resources set up a Multi-Disciplinary Committee in year 2001 under the Chairmanship of Dr. B.K. Mittal, Former Chairman, Central Water Commission, to identify cause and extent of siltation in rivers, suggest measures to minimize siltation, examine as to whether desilting is a technically feasible means to minimize magnitude of floods in rivers, suggest appropriate technology/ methods of desilting of rivers if found technically feasible, find economic viability of desilting of rivers, propose a realistic operational programme in a time-bound manner.

The main recommendations and suggestions of the Committee are as under:

(i) The desilting in general is not feasible technically, due to several reasons like non-sustainability, non-availability of vast land required for disposal of dredged material etc. the desilting by dredging in general should not be resorted to particularly in major rivers. Some locations such as tidal rivers, confluence points and the likes can be tackled by desilting after thorough examination. Desilting of rivers can marginally minimise the magnitude of floods and be effective only for a short period. Desilting is not recommended on a large scale. However, desilting can be done in vulnerable reaches for some specific purpose like for improving the hydraulic characteristics of the river. For navigation purpose, the river waterways need to be dredged every year to have minimum depth of water.

(ii) Desilting of rivers for flood control is not an economically viable solution.

(iii) Aggradation, contrary to the general impression is not pronounced and alarming. Though there is heavy sediment load in rivers, the natural process of "self scouring" ensures that there is no substantial aggradation, in totality.

(iv) The method of minimising siltation may be of two fold; one that is required in the catchment and other in the river self.The method to be adopted in the former viz. the catchment may include afforestation, right practice of land use, catchment area treatment. The method in respect of later viz "the river itself" may include construction of suitable hydraulic structures that may trap silt.

(v) The Committee is of the opinion that where siltation has taken place on one bank and erosion on the other bank of river, silt can be removed from deposit area and dumped in suitable area with proper investigation.

(vi) The carrying capacity of a river should be monitored on regular basis to obtain a correct knowledge regarding aggradation/degradation.

2. Committee headed by Shri Madhav Chitale, Expert Member(NGRBA)(2016)

The National Mission for Clean Ganga (NMCG), Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD & GR) constituted a Committee for preparation of guidelines for works on de-siltation from Bhimgauda (Uttarakhand) to Farakka (West Bengal) under the Chairmanship of Shri Madhav Chitale, Expert Member, NGRBA in July, 2016. The main recommendations of the committee are as under:

(i) Erosion, sediment transport and siltation in large rivers like Ganga are very complex phenomena and their estimation has inherent limitations and uncertainties. A reconnaissance of main River Ganga reveals that different reaches are in a dynamic equilibrium phase. Sedimentation is mainly seen downstream of Bhimgauda barrage and near the confluences of tributary rivers with Ganga.

(ii) Though de-siltation works can improve hydraulic performance of the river and this itself can justify undertaking de-siltation, these have no direct role in improving environment flow in the river. On the other hand, indiscriminate de-silting or sand mining would cause adverse impacts on river e-flow.

(iii) River Ganga tends to achieve equilibrium on its own given the hydrology, sediment and natural bed and bank disposition. It is necessary to provide the river sufficient areas of flood plain and lakes along the river to moderate the flood level. Any encroachment of flood plain, reclamation of lakes or disconnection of lakes from river should be avoided; rather adjoining lakes/depressions may be de-silted to increase their storage capacities.

(iv) Comprehensive Catchment Area Treatment and Watershed Development works, along with good agricultural practices and river bank protection/anti-erosion works are necessary to reduce silt inflow into the river system.

(v) Upstream reaches of natural constriction works, like barrages/bridges, etc., tend to get silted leading to wandering of river. Possibly river training, cut-off developments and provision of extra water way near the constrictions could be tried after proper

assessment without impacting the morphology of river elsewhere. Efforts should be made to provide silt continuity along the weirs and barrages.

(vi) The proposed desilting of any river reach need to be justified bringing out clearly the flooding caused due to siltation along with technical comparison of the alternative flood mitigation measures with "do nothing" or "proposed desilting/ dredging" being other options. It should invariably be associated with sediment flux studies and morphological studies to confirm no significant adverse effect on downstream or upstream reach of the river including the safety and effectiveness of river crossings, water intakes, existing river bank / flood protection measures etc.

(vii) Reservoirs in main river Ganga and its tributaries, particularly in upper reaches, should be operated in such a manner that first floods, having high silt load, are allowed to pass through without storage and river flows in later phases of the monsoon are only stored for use during non-monsoon season. This would require quantitative long term forecast with decision support system to be established for optimum reservoir operations.

(viii) The proposal should also contain environmentally acceptable and practically feasible silt disposal plan. River gravels/sands/silts could be used gainfully in construction works, including housing, roads, embankment and reclamation works. Under no circumstances, disposal should create any contamination of the water bodies, harmful to the flora and fauna existing adjacent to the disposal sites. It should also be ensured that disposed material should not come back into the river again.

(ix) The dredging/desiltation/mining activities may result into some adverse impacts, i.e. (a) River bed degradation; (b) Bank erosion; (c) Channel widening; (d) lowering of water surface elevations in the river channel; (e) lowering of water table elevation adjacent to the river; (f) a reduction in the structural integrity of bridges, pipelines, jetties, barrages, weirs, foundations supporting high tension lines, existing bank protection works and other manmade structures; and (g) a loss of environmental values resulting from (a) through (e). As such, restrictions need to be enforced before planning and executing any dredging/ de-silting / mining activities.

3. Expert Committee on Erosion and Siltation in Rivers(ECESR)(2016)
The Ministry has constituted an Expert Committee on Erosion and Siltation in Rivers (ECESR) in May, 2016 to study the problems of erosion, siltation and requirement of desiltation / dredging of rivers, particularly, Ganga and Brahmaputra rivers and suggest remedial measures. The Committee will study and review the recommendations of various important Expert Committees constituted in past on siltation of rivers and recommend suitable measures of erosion control and appropriate combination of raising and strengthening of existing embankments, measures to control siltation of river beds and techno-environmentally permissible de-siltation/dredging of river beds for providing adequate waterways to safe passage of flows in floods.

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